



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/327,351	06/05/1999	STANISLAV I. IONOV	PD-970411	5316

20991 7590 10/15/2002

HUGHES ELECTRONICS CORPORATION
PATENT DOCKET ADMINISTRATION
BLDG 001 M/S A109
P O BOX 956
EL SEGUNDO, CA 902450956

EXAMINER

PHAN, HANH

ART UNIT PAPER NUMBER

2633

DATE MAILED: 10/15/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/327,351

Applicant(s)

IONOV ET AL.

Examiner

Hanh Phan

Art Unit

2633

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 June 1999.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____.

Art Unit: 2633

DETAILED ACTION

1. This Office Action is responsive to the Amendment filed on 07/22/2002.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-3, 6-9, 22-24, and 27 are rejected under 35U.S.C.103(a) as being unpatentable over Montpetit (U.S.Patent number 6,366,761) in view of Rockwell (U.S.Patent number 6,327,063) and further in view of Taormina et al (U.S. Patent number 6,257,526).

Regarding claims 1 and 22, referring to Figure 2, Montpetit discloses a satellite constellation comprising: a plurality of satellites (i.e., satellites 13a, 13b, 13c, ..., 13y)(Fig. 2, col. 4, lines 27-31), each of said satellites (13a, 13b, 13c, ..., 13y) having an RF ground link for communicating with a ground station (16, 18)(col. 4, lines 30-36) and a laser inter-satellite link (col. 12, lines 42-44) for communication with at least one of the plurality of satellites, a plurality of satellites(13a, 13b, 13h, 13m, 13l, 13f, 13g)(Figure 2) arranged to have a first subset of satellites, said first subset of satellites configured to communicate (col. 1, lines 22-50, col. 4, lines 27-64).

Montpetit differs from claims 1 and 22 in that he does not specifically teach a satellite having a reconfigurable optical transmitter and reconfigurable optical receiver for sending and

Art Unit: 2633

receiving data streams and for optical inter-satellite link, each reconfigurable optical transmitter having a first optical carrier associated therewith and a reconfigurable optical receiver and the plurality of satellites arranged to have a second subset of satellites having at least one different satellite than that of the first subset, said second subset of satellites are configured to communicate. However, Rockwell discloses each satellite having a reconfigurable optical transmitter and reconfigurable optical receiver for sending and receiving data streams and for optical inter-satellite link, each reconfigurable optical transmitter having a first optical carrier associated therewith and a reconfigurable optical receiver (Figure 1, column 1, lines 5-8 and lines 10-45, column 2, lines 6-15) and Taormina discloses a plurality of satellites arranged to have a second subset of satellites having at least one different satellite than that of said first subset, said second subset of satellites are configured to communicate (Figs. 3A-3D, col. 4, lines 55-67, and col. 5, lines 1-35). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the satellite having a reconfigurable optical transmitter and reconfigurable optical receiver and the plurality of satellites arranged to have a second subset of satellites having at least one different satellite than that of said first subset, said second subset of satellites are configured to communicate as taught by Rockwell and Taormina in the system of Montpetit in order to reduce power consumption, weight, cost, the interference between the signals, and eliminating mechanical motion of optical elements and provide satellite data communication networks.

Art Unit: 2633

Regarding claims 2 and 23, Montpetit further discloses each of said plurality of satellites comprises a communications table (95)(Fig. 10 of Montpetit, col. 12, lines 21-65).

Regarding claims 3 and 24, Montpetit further discloses the communications table has plurality of routes for communicating between satellites in said first subset (Fig. 10 Montpetit, col. 12, lines 21-65).

Regarding claims 6 and 27, it would have been obvious to obtain the reconfigurable optical receiver is one from the group consisting of a Fabry-Perot filter, a wavelength division multiplexer, and a fiber grating based optical switch in order to select and distribute the signals to the user terminals.

Regarding claim 7, Montpetit further discloses the satellites are in low earth orbit (col 4 of Montpetit, lines 27-64).

Regarding claim 8, it would have been obvious to obtain satellites are in medium earth orbit in order to provide a low altitude and the data signals communication via the satellites will do not travel much time in transmission, and reduce power consumption and costs.

Regarding claim 9, the combination of Montpetit, Rockwell, and Taormina discloses the first and second subsets are aligned with a landmass (Figs. 2 and 3 of Montpetit, Figs. 3A-3D of Taormina).

4. Claims 4, 5, 25, and 26 are rejected under 35U.S.C.103(a) as being unpatentable over Montpetit (U.S.Patent number 6,366,761) and Rockwell (U.S.Patent number 6,327,063) in view

Art Unit: 2633

of Taormina et al (U.S. Patent number 6,257,526) and further in view of Glynn (U.S. Patent number 5,552,920).

Regarding claims 4 and 25, the combination of Montpetit, Rockwell, and Taormina differs from claims 4 and 25 in that it does not specifically teach the reconfigurable optical transmitter comprises an array of laser diodes. However, Glynn discloses an optical transmitter comprises an array of laser diodes (Figure 2, col. 5, lines 39-47). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the optical transmitter comprises an array of laser diodes as taught by Glynn in the system of Montpetit, Rockwell, and Taormina in order to reduce the channel crosstalk and signal loss.

Regarding claims 5 and 26, the combination of Montpetit, Rockwell, Taormina, and Glynn teaches an optical transmitter is tunable to generate a plurality of wavelengths (Fig. 2 of Glynn, col. 5, lines 39-49, col. 6, lines 14-50).

5. Claims 10, 17-20, and 30-32 are rejected under 35U.S.C.103(a) as being unpatentable over Montpetit (U.S. Patent number 6,366,761) and Rockwell (U.S. Patent number 6,327,063) in view of Taormina et al (U.S. Patent number 6,257,526) and further in view of Kintis et al (U.S. Patent number 5,661,582).

Regarding claim 10, the combination of Montpetit, Rockwell, Taormina differs from claim 10 in that it does not specifically teach the subset comprises seven satellites using three optical carriers. However, Kintis discloses satellites using three optical carriers (Figure 2, column 4, lines 45-67). Therefore, it would have been obvious to one of ordinary skill in the art at the

Art Unit: 2633

time the invention was made to incorporate the optical transmitter is tunable to generate a plurality of wavelengths as taught by Kintis in the system of Montpetit, Rockwell, and Taormina in order to increase bandwidth capabilities, increase versatility, decrease weight and size of the satellite, decrease power consumption and launch costs and reduce the interference between the signals and to allow allocating transmission capacity in the LEO satellite data communication network and reduce the interference between the signals.

Regarding claim 17, the combination of Montpetit, Rockwell, Taormina, and Kintis discloses a method of communicating within a satellite communications comprising the steps of:

deploying a plurality of satellites (Fig. 2 of Montpetit);

grouping a first subset of the plurality of satellites into a first local area network (Fig.2 of Montpetit);

forming a plurality of routes between the satellites in the first local area network (col. 12 of Montpetit, lines 21-65).

assigning an optical carrier for each route (Figure 2 of Kintis, column 4, lines 45-67).

Regarding claims 18 and 30, the combination of Montpetit, Rockwell, Taormina, and Kintis discloses the steps of forming a second local area network by grouping a second subset of the plurality of satellites and interconnecting the first local area network and the second local area network to form a wide area network (Fig. 2 of Montpetit, col. 1, lines 22-50 and Figs. 3A-3D of Taormina, col. 4, lines 55-67, and col. 5, lines 1-35).

Art Unit: 2633

Regarding claims 19 and 20, the combination of Montpetit, Rockwell, Taormina, and Kintis discloses wherein the step of assigning an optical carrier comprises the step of obtaining the optical carrier and route from a respective optical wavelength selector and communication table (Figs 2 and 3 of Montpetit and and Figs 3 and 4 of Kintis) and the step of assigning comprises the step of reusing the optical carriers.

Regarding claim 31, the combination of Montpetit, Rockwell, Taormina, and Kintis discloses wherein superceding said first subset comprises reconfiguring a reconfigurable optical transmitter for each of the satellites in the second subset (Figure 1 of Rockwell, column 1, lines 5-8 and lines 10-45, column 2, lines 6-15).

Regarding claim 32, the combination of Montpetit, Rockwell, Taormina, and Kintis discloses wherein reconfiguring a reconfigurable optical transmitter comprises changing a plurality of routes between the satellites in the second local area network relative to the first local area network.

6. Claims 11-14, 21, 28, and 29 are rejected under 35U.S.C.103(a) as being unpatentable over Montpetit (U.S.Patent number 6,366,761) in view of Rockwell (U.S.Patent number 6,327,063) and further in view of Zanchi et al (U.S.Patent number 6,208,625).

Regarding claims 11, 21, 28, and 29, referring to Figure 2, Montpetit discloses a global communications system comprising: a plurality of satellites spaced about the earth, a first subset of said plurality of satellites (i.e., satellites 13a, 13b, 13c, ..., 13y)(Fig. 2, col. 4, lines 27-31) forming a local area network over a landmass.

Art Unit: 2633

Montpetit differs from claims 11, 21, 28, and 29 in that he does not specifically teach first subset of satellites having a first plurality of optical carriers assigned thereto for intercommunication and a second plurality of optical carriers assigned for communicating with other satellites outside of the subset. However, Rockwell teaches first subset of satellites having a first plurality of optical carriers assigned thereto for intercommunication (Figure 1, column 1, lines 5-8 and lines 10-45, column 2, lines 6-15) and Zanchi teaches a second plurality of signal carriers assigned for communicating with other satellites outside of the subset (Fig. 5, col. 6, lines 20-45). Therefore, it would have obvious to one of ordinary skill in the art at the time the invention was made to incorporate the satellites as taught by Rockwell and Zanchi in the system of Montpetit in order to reduce the interference between the signals.

Regarding claim 12, Montpetit further discloses each of said plurality of satellites comprises a communications table (95)(Fig. 10 of Montpetit, col. 12, lines 21-65).

Regarding claim 13, Montpetit further discloses the communication table has a plurality of paths for communication between of said satellites of said first subset (Fig. 10 of Montpetit, col. 12, lines 21-65).

Regarding claim 14, the combination of Montpetit, Rockwell, and Zanchi teaches a satellite having a reconfigurable optical transmitter and reconfigurable receiver (Figure 1 of Rockwell, column 1, lines 5-8 and lines 10-45, column 2, lines 6-15).

7. Claims 15 and 16 are rejected under 35U.S.C.103(a) as being unpatentable over Montpetit (U.S.Patent number 6,366,761) and Rockwell (U.S.Patent number 6,327,063) in view

Art Unit: 2633

of Zanco et al (U.S.Patent number 6,208,625) and further in view of Glynn (U.S.Patent number 5,552,920).

Regarding claim 15, the combination of Montpetit, Rockwell, and Zanco differs from claim 15 in that it does not specifically teach the reconfigurable optical transmitter comprises an array of laser diodes. However, Glynn discloses an optical transmitter comprises an array of laser diodes (Figure 2, col. 5, lines 39-47). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the optical transmitter comprises an array of laser diodes as taught by Glynn in the system of Montpetit, Rockwell, and Zanco in order to reduce the channel crosstalk and signal loss.

Regarding claim 16, the combination of Montpetit, Rockwell, Zanco, and Glynn teaches an optical transmitter is tunable to generate a plurality of wavelengths (Figure 2 of Glynn, col. 5, lines 39-49).

8. Applicant's arguments with respect to claims 1-20 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hanh Phan whose telephone number is (703)306-5840.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan, can be reached on (703)305-4729. The fax phone number for the organization where this application or proceeding is assigned is (703)872-9314.

Application/Control Number: 09/327351

Page 10

Art Unit: 2633

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)305-4700.

Leslie Pascal
LESLIE PASCAL
PRIMARY EXAMINER